## WHAT IS CLAIMED IS:

1. A customer impact estimation system to evaluate impact to a customer by a revision of a technology process in microelectronics manufacturing, the system comprising:

a user interface configured to accept a predefined search scope and a predefined search scheme;

an extraction module, responsive to the user interface, configured to search and extract information of a customer who has used a design technical documents database, wherein the design technical documents database includes information related to the technology process; and

an estimation module configured to analyze the information of the customer and evaluate for the impact to the customer by the revision of the technology process.

- 2. The customer impact estimation system of claim 1, wherein the predefined search scope includes a period of time, a type of technology, and a physical region.
- 3. The customer impact estimation system of claim 1, wherein the predefined search scheme includes document title, document number, vendor, maker, and end customer.
- 4. The customer impact estimation system of claim 3 wherein the vendor comprises one of an electronic design automation (EDA) vendor, a chip service company, a library and intellectual property (IP) vendor.
- 5. The customer impact estimation system of claim 3 wherein the maker comprises one of a photomask maker, a wafer manufacturer, a testing facility, and a packaging facility.
- 6. The customer impact estimation system of claim 1, wherein the design technical document database includes at least a process document, and at least a technical file.

- 7. The customer impact estimation system of claim 6, wherein the process document includes product specification document, design rule manual, and simulation model document.
- 8. The customer impact estimation system of claim 6, wherein the technical file includes a design-rule-check (DRC) document, a layout-versus-schematic (LVS) document, and a RC extraction document.
- 9. The customer impact estimation system of claim 1 wherein the system is further connected to a virtual fab that is a network entity.
- 10. The customer impact estimation system of claim 9 wherein the virtual fab is further connected to at least one of a customer, a vendor, a manufacturer, and a design group.
- 11. The customer impact estimation system of claim 9 wherein the virtual fab comprises a plurality of database including the design technical document database.
- 12. The customer impact estimation system of claim 1 wherein the user interface further provides a search result to a user.
- 13. The customer impact estimation system of claim 1 wherein the extraction module searches relevant documents according to the predefined search scheme.
- 14. The customer impact estimation system of claim 13 wherein the extraction module searches for customers who have downloaded the relevant documents during the predefined search scope.
- 15. The customer impact estimation system of claim 14 wherein the extraction module extracts information of the customers through download history relevant documents.

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16. The customer impact estimation system of claim 1 wherein the estimation module provides a list of customers who are impacted by the revision of the technology process.

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- 17. The customer impact estimation system of claim 16 wherein the estimation module further provides a list of customers who are impacted by the revision of the technology process according to a quantitative criteria.
- 18. The customer impact estimation system of claim 1 wherein the estimation module provides a quantitative estimation of customer impact by the revision of the technology process according to a quantitative criteria.
- 19. The customer impact estimation system of claim 18 wherein the estimation module further provides a suggestion for a communication with relevant customers, vendors, and makers for the revision of the technology process.
- 20. A method to evaluate an impact to a customer caused by a revision of a specific technology process in microelectronics manufacturing, the method comprising: providing a search scope to a user interface; providing a search scheme to the user interface; and

searching, according to the search scope and the search scheme, a design technical documents database that includes information related to the technology process to determine a customer impacted by the revision.

- 21. The method of claim 20 wherein the search scope includes one of a period of time, a type of technology, and a physical region of a customer.
- 22. The method of claim 21 wherein the search scheme includes one of a document title, a document number, a vendor, a maker and an end customer.

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- 23. The method of claim 20 wherein the type of technology includes 0.25  $\mu m$  and above, 0.25  $\mu m$  to 0.15  $\mu m$ , 0.15  $\mu m$  to 0.09  $\mu m$ , and below 0.09  $\mu m$ .
- 24. The method of claim 20 wherein a period of time includes one of 3 months, 6 months, and 12 months.
- 25. The method of claim 20 wherein the vendor comprises one of an electronic design automation (EDA) vendor, a chip service company, a library and intellectual property (IP) vendor.
- 26. The method of claim 20 wherein the maker includes one of a photomask maker, a wafer manufacturer, a testing facility, and a packaging facility.
- 27. The method of claim 20 wherein the design database comprises one of design rule check (DRC) database, layout versus schematic (LVS) database, and RC extraction database.
- 28. The method of claim 20 wherein the searching is implemented by a customer impact estimation system connected to a virtual fab.
- 29. The method of claim 28 wherein the searching is implemented through the virtual fab, wherein the virtual fab is a network entity.
- 30. The method of claim 29 wherein the virtual fab is connected to at least a customer, a vendor, a manufacturer, and a design lab.
  - 31. The method of claim 20 further comprising:

specifying a change of process wherein the change of process is associated with a technical document; and

verifying validity of the change of process according to a set of predefined rules.

32. A method to evaluate an impact to a customer caused by a revision of a specific technology process in microelectronics manufacturing, the method comprising:

specifying a change of process wherein the change of process is associated with a technical document;

verifying validity of the change of process according to a set of predefined rules; providing a search scope;

providing a search scheme;

implementing a search of a plurality of design databases according to the search scope and the search scheme; and

providing a result of the search.